

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A photovoltaic cell, comprising:
a first electrode;
a mesh electrode; and
a photoactive layer between the first and mesh electrodes, the photoactive layer comprising:
an electron acceptor material comprising a fullerene; and
an electron donor material comprising a polymer,
wherein the mesh electrode is in contact with the photoactive layer.
2. (Original) The photovoltaic cell of claim 1, wherein the mesh electrode is a cathode.
3. (Original) The photovoltaic cell of claim 1, wherein the mesh electrode is an anode.
4. (Previously Presented) The photovoltaic cell of claim 1, wherein the mesh electrode comprises an electrically conductive material.
5. (Original) The photovoltaic cell of claim 4, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

6. (Original) The photovoltaic cell of claim 1, wherein the mesh electrode comprises wires.

7. (Original) The photovoltaic cell of claim 6, wherein the wires comprise an electrically conductive material.

8. (Original) The photovoltaic cell of claim 7, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

9. (Original) The photovoltaic cell of claim 6, wherein the wires comprise a coating including an electrically conductive material.

10. (Original) The photovoltaic cell of claim 9, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

11. (Original) The photovoltaic cell of claim 1, wherein the mesh electrode comprises an expanded mesh.

12. (Original) The photovoltaic cell of claim 1, wherein the mesh electrode comprises a woven mesh.

13. (Cancelled).

14. (Original) The photovoltaic cell of claim 1, wherein the electron acceptor material comprises a substituted fullerene.

15. (Previously Presented) The photovoltaic cell of claim 1, wherein the polymer comprises a material selected from the group consisting of polythiophenes, polyphenylenes, polyphenylvinylenes, polysilanes, polythienylvinylenes and polyisothianaphthalenes.

16. (Previously Presented) The photovoltaic cell of claim 1, wherein the polymer comprises poly(3-hexylthiophene).

17. (Previously Presented) The photovoltaic cell of claim 1, further comprising a hole blocking layer between the photoactive layer and the first electrode.

18. (Original) The photovoltaic cell of claim 17, wherein the hole blocking layer comprises a material selected from the group consisting of LiF, metal oxides and combinations thereof.

19-22. (Cancelled).

23. (Previously Presented) The photovoltaic cell of claim 1, further comprising a hole carrier layer between the photoactive layer and the first electrode.

24. (Original) The photovoltaic cell of claim 23, wherein the hole carrier layer comprises a material selected from the group consisting of polythiophenes, polyanilines, polyvinylcarbazoles, polyphenylenes, polyphenylvinylenes, polysilanes, polythienylenevinylenes, polyisothianaphthanes and combinations thereof.

25. (Original) The photovoltaic cell of claim 1, wherein the first electrode comprises a mesh electrode.

26. (Currently Amended) A photovoltaic cell, comprising:
a first electrode;
a mesh electrode;
a photoactive layer between the first and mesh electrodes, the photoactive layer comprising:
an electron acceptor material comprising a fullerene; and
an electron donor material comprising a polymer;
a hole blocking layer between the first electrode and the photoactive layer; and
a hole carrier layer between the mesh electrode and the photoactive layer,
wherein the mesh electrode is in contact with the hole carrier layer.

27. (Original) The photovoltaic cell of claim 26, wherein the mesh comprises an electrically conductive material.

28. (Original) The photovoltaic cell of claim 27, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

29. (Original) The photovoltaic cell of claim 26, wherein the hole carrier layer comprises a material selected from the group consisting of polythiophenes, polyanilines, polyvinylcarbazoles, polyphenylenes, polyphenylvinylenes, polysilanes, polythienylenevinylenes, polyisothianaphthanenes and combinations thereof.

30. (Original) The photovoltaic cell of claim 29, wherein the hole blocking layer comprises a material selected from the group consisting of LiF, metal oxides and combinations thereof.

31. (Original) The photovoltaic cell of claim 26, wherein the hole blocking layer comprises a material selected from the group consisting of LiF, metal oxides and combinations thereof.

32. (Original) The photovoltaic cell of claim 26, wherein the mesh electrode comprises wires.

33. (Original) The photovoltaic cell of claim 32, wherein the wires comprise an electrically conductive material.

34. (Original) The photovoltaic cell of claim 33, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

35. (Original) The photovoltaic cell of claim 32, wherein the wires comprise a coating including an electrically conductive material.

36. (Original) The photovoltaic cell of claim 35, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

37. (Original) The photovoltaic cell of claim 26, wherein the mesh electrode comprises an expanded mesh.

38. (Original) The photovoltaic cell of claim 26, wherein the mesh electrode comprises a woven mesh.

39. (Original) The photovoltaic cell of claim 26, wherein the first electrode comprises a mesh electrode.

40. (Original) The photovoltaic cell of claim 26, further comprising a substrate supporting the mesh electrode.

41. (Original) The photovoltaic cell of claim 40, further comprising an adhesive material between the substrate and the hole carrier layer.

42. (Original) The photovoltaic cell of claim 40, wherein the hole carrier layer is in contact with the substrate.

43. (Original) A photovoltaic system comprising a plurality of photovoltaic cells of claim 1, at least some of the plurality of photovoltaic cells being electrically connected.

44. (Original) The photovoltaic system of claim 43, wherein all of the plurality of photovoltaic cells are electrically connected.

45. (Original) The photovoltaic system of claim 43, wherein at least some of the electrically connected photovoltaic cells are electrically connected in parallel.

46. (Original) The photovoltaic system of claim 43, wherein at least some of the electrically connected photovoltaic cells are electrically connected in series.

47. (Original) The photovoltaic system of claim 43, wherein the photovoltaic system is wherein at least some of the electrically connected photovoltaic cells are electrically connected in to a load.

48. (Previously Presented) A photovoltaic system comprising a plurality of photovoltaic cells of claim 26, at least some of the plurality of photovoltaic cells being wherein at least some of the electrically connected photovoltaic cells are electrically connected.

49. (Original) The photovoltaic system of claim 48, wherein all of the plurality of photovoltaic cells are electrically connected.

50. (Original) The photovoltaic system of claim 48, wherein at least some of the electrically connected photovoltaic cells are electrically connected in parallel.

51. (Original) The photovoltaic system of claim 48, wherein at least some of the electrically connected photovoltaic cells are electrically connected in series.

52. (Original) The photovoltaic system of claim 48, wherein the photovoltaic system is wherein at least some of the electrically connected photovoltaic cells are electrically connected in parallel to a load.

53. (New) A photovoltaic cell, comprising:
a first electrode;
a mesh electrode;
a photoactive layer between the first and mesh electrodes, the photoactive layer comprising:
an electron acceptor material comprising a fullerene; and
an electron donor material comprising a polymer;
a hole carrier layer between the first electrode and the photoactive layer; and
a hole blocking layer between the mesh electrode and the photoactive layer,
wherein the mesh electrode is in contact with the hole blocking layer layer.

54. (New) The photovoltaic cell of claim 53, wherein the mesh comprises an electrically conductive material.

55. (New) The photovoltaic cell of claim 54, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

56. (New) The photovoltaic cell of claim 53, wherein the hole carrier layer comprises a material selected from the group consisting of polythiophenes, polyanilines, polyvinylcarbazoles, polyphenylenes, polyphenylvinylenes, polysilanes, polythienylenevinylenes, polyisothianaphthenes and combinations thereof.

57. (New) The photovoltaic cell of claim 56, wherein the hole blocking layer comprises a material selected from the group consisting of LiF, metal oxides and combinations thereof.

58. (New) The photovoltaic cell of claim 53, wherein the hole blocking layer comprises a material selected from the group consisting of LiF, metal oxides and combinations thereof.

59. (New) The photovoltaic cell of claim 53, wherein the mesh electrode comprises wires.

60. (New) The photovoltaic cell of claim 59, wherein the wires comprise an electrically conductive material.

61. (New) The photovoltaic cell of claim 60, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

62. (New) The photovoltaic cell of claim 59, wherein the wires comprise a coating including an electrically conductive material.

63. (New) The photovoltaic cell of claim 62, wherein the electrically conductive material is selected from the group consisting of metals, alloys, polymers and combinations thereof.

64. (New) The photovoltaic cell of claim 53, wherein the mesh electrode comprises an expanded mesh.

65. (New) The photovoltaic cell of claim 53, wherein the mesh electrode comprises a woven mesh.

66. (New) The photovoltaic cell of claim 53, wherein the first electrode comprises a mesh electrode.

67. (New) The photovoltaic cell of claim 53, further comprising a substrate supporting the mesh electrode.

68. (New) The photovoltaic cell of claim 67, further comprising an adhesive material between the substrate and the hole carrier layer.

69. (New) The photovoltaic cell of claim 67, wherein the hole carrier layer is in contact with the substrate.

70. (New) A photovoltaic system comprising a plurality of photovoltaic cells of claim 53, at least some of the plurality of photovoltaic cells being wherein at least some of the electrically connected photovoltaic cells are electrically connected.

71. (New) The photovoltaic system of claim 70, wherein all of the plurality of photovoltaic cells are electrically connected.

72. (New) The photovoltaic system of claim 70, wherein at least some of the electrically connected photovoltaic cells are electrically connected in parallel.

73. (New) The photovoltaic system of claim 70, wherein at least some of the electrically connected photovoltaic cells are electrically connected in series.

74. (New) The photovoltaic system of claim 70, wherein the photovoltaic system is wherein at least some of the electrically connected photovoltaic cells are electrically connected in parallel to a load.

75. (New) A method of preparing a photovoltaic cell, comprising:
supporting a mesh with a substrate, the mesh and the substrate forming at least a portion of a first electrode; and
supporting a photoactive layer with the mesh to provide a portion of the photovoltaic cell.

76. (New) A method of preparing a module, comprising:
supporting a mesh with an advancing substrate, the mesh and the substrate forming at least a portion of each of a plurality of first electrodes; and
supporting a photoactive layer with the mesh to provide a portion of the module.

77. (New) A method of preparing a photovoltaic cell, comprising:
supporting a mesh with a substrate, the mesh and the substrate forming at least a portion of a first electrode; and
supporting a photoactive layer with the mesh, the photoactive layer comprising an electron acceptor material and an electron donor material to provide a portion of the photovoltaic cell.

78. (New) A method of preparing a module, comprising:
supporting a mesh with an advancing substrate, the mesh and the substrate forming at least a portion of each of a plurality of first electrodes; and
supporting a photoactive layer with the mesh, the photoactive layer comprising an electron acceptor material and an electron donor material to provide a portion of the module.

79. (New) An article, comprising:
a first electrode;
a mesh electrode; and
an active layer between the first and mesh electrodes, the active layer comprising copper indium and gallium;
wherein the article is configured as a photovoltaic cell.

80. (New) An article, comprising:
a first electrode;
a mesh electrode; and
an active layer between the first and mesh electrodes, the active layer comprising amorphous silicon;
wherein the article is configured as a photovoltaic cell.